

## ABSTRACT

A series of compounds in the 4-fluoroalkyl-3-halophenyl nortropanes and 4-haloethenylphenyl tropane families are described as diagnostic and therapeutic agents for diseases associated with serotonin transporter dysfunction. These compounds bind to serotonin transporter protein with high affinity and selectivity. The invention provides methods of synthesis which incorporate radioisotopic halogens at a last step which permit high radiochemical yield and maximum usable product life. The radiolabeled compounds of the invention are useful as imaging agents for visualizing the location and density of serotonin transporter by PET and SPECT imaging.